EMERGENCY AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

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DATE: April 23, 2003
AD #: 2003-08-53

Send to all U.S. owners and operators of Eurocopter France Model SA-365N1, AS365-N2, AS 365 N3, and SA-366G1 helicopters.

This superseding Emergency Airworthiness Directive (EAD) is prompted by reports of an incident involving failure of the tail rotor blade (blade) and an in-flight failure of a blade due to a fatigue crack. This condition, if not corrected, could result in failure of a blade, loss of tail rotor control, and subsequent loss of control of the helicopter.

On May 9, 2000, the FAA issued AD 2000-10-08, Amendment No. 39-11732 (65 FR 31256, May 17, 2000), to require inspecting each blade for bonding separation, measuring the clearance between the tip of each blade and the circumference of the air duct, and replacing a blade if necessary. That action was prompted by an inflight incident in which the blades were significantly damaged due to bonding separation. That condition, if not corrected, could result in loss of tail rotor control and subsequent loss of control of the helicopter.

After issuing that AD, the FAA reevaluated the requirements due to reports from operators that the AD had placed an unnecessary burden on them and that a pilot should be allowed to perform the check. Also, Eurocopter issued Service Bulletins 05.09 and 05.00.17, both dated December 18, 1998; and the Direction Generale De L'Aviation Civile (DGAC) (France) issued AD's 88-152-010(A)R5 and 88-153-023(A)R5, both dated December 30, 1998. The FAA reviewed these documents and determined that the pilot can check for a cracked, blistered, or wrinkled blade and that some debonding of the blade is acceptable and issued AD No. 2000-10-08R1 on September 25, 2001 (66 FR 50307, October 3, 2001), which amended AD No. 2000-10-08.

Since issuing AD 2000-10-08R1, we have determined that decreasing the interval for conducting the tapping test for bonding separation for the blades is necessary due to the discovery of skin debonding following a blade failure. Also, we have determined that removing certain blades at specified hours TIS due to the in-flight failure of a blade with a fatigue crack and establishing a life limit are required. Including Eurocopter France (Eurocopter) Model AS 365 N3 helicopters in the applicability is also required and should have been included in the existing AD. Also, in the applicability, the reference to blade, part number (P/N) 365A12-0020-all dash numbers, is corrected to read 365A12-0020-00, -01, -02, or –03.

The FAA has reviewed Edition No. 1, Revision No. 0, of Eurocopter Alert Service Bulletin No. 05.09 for Model SA366G1 helicopters and No. 05.00.17 for Model AS 365 N1, N2, and N3 helicopters, both dated April 16, 2003, which describe procedures for blade monitoring and limitations.

The Direction Generale De L'Aviation Civile (DGAC), the airworthiness authority for France, notified the FAA that an unsafe condition may exist on these helicopter models. The DGAC advises that fatigue failure of the Kevlar tie bar of a blade and loss of the anti-torque function led to an accident. The DGAC classified the alert service bulletins as mandatory and issued AD Nos. T2003-155(A) for Eurocopter Model AS 365 N helicopters and T2003-156(A) for Eurocopter Model SA 366 helicopters, both dated April 17, 2003, to ensure the continued airworthiness of these helicopters in France.

These helicopter models are manufactured in France and are type certificated for operation in the United States under the provisions of 14 CFR 21.29 and the applicable bilateral agreement. Pursuant to the applicable bilateral agreement, the DGAC has kept the FAA informed of the situation described above. The FAA has examined the findings of the DGAC, reviewed all available information, and determined that AD action is necessary for products of these type designs that are certificated for operation in the United States.

The previously described unsafe condition is likely to exist or develop on other helicopters of these same type designs. Therefore, in addition to the checks and tapping test inspections required in the existing AD, this AD requires the following:

- Add the Eurocopter Model AS 365 N3 to the applicability.
- Correct blade, P/N 365A12-0020-all dash numbers, to read 365A12-0020-00, -01, -02, or -03.
- At intervals not to exceed 25 hours time-in-service (TIS), do tapping tests for bonding separation on blades.
- Within 10 hours TIS, remove blades with 150 or more hours TIS.
- On or before 160 hours TIS, remove blades with less than 150 hours TIS.

This AD revises the Airworthiness limitations section of the maintenance manual by establishing a 160-hour TIS life limit for blades, P/N 365A12-0020-02 and 365A12-0020-03, with a S/N equal to or greater than 32944, except for S/N 32963 through 33091, S/N 33116 through 33187, and S/N 33232 through 33319.

An owner/operator (pilot) may perform the visual checks for a crack, blister, or wrinkling in the blade. Pilots may perform these checks because they require no tools and can be accomplished by observation and may be performed equally well by a pilot or a mechanic. However, the pilot must enter compliance with those requirements into the helicopter maintenance records in accordance with 14 CFR 43.11 and 91.417(a)(2)(v).

This rule is issued under 49 U.S.C. Section 44701 pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this emergency AD.

2003-08-53 EUROCOPTER FRANCE: Docket No. 2003-SW-20-AD. Supersedes AD 2000-10-08, Amendment 39-11732, and 2000-10-08R1, Amendment 39-12452, both Docket No. 99-SW-34-AD.

Applicability: Model SA-365N1, AS365-N2, AS 365 N3, and SA-366G1 helicopters, with a tail rotor blade (blade), part number 365A33-2131-all dash numbers; 365A12-0010-all dash numbers; or 365A12-0020-00, -01, -02, or –03; installed, certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To prevent failure of a blade, loss of tail rotor control, and subsequent loss of control of the helicopter, accomplish the following:

(a) Within 10 hours time-in-service (TIS) and thereafter before the first flight of each day, visually check each blade for a crack, blister, or wrinkling. An owner/operator (pilot), holding at least a private pilot certificate, may perform the visual check and must enter compliance into the aircraft maintenance records in accordance with 14 CFR sections 43.11 and 91.417(a)(2)(v)). See Figure 1 as follows:

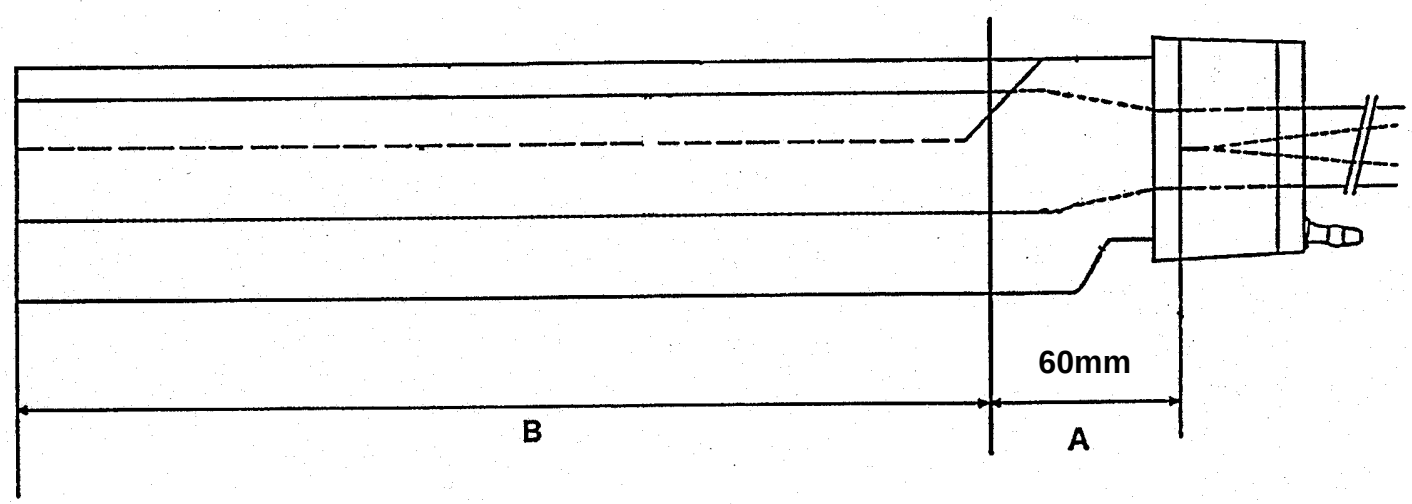

Figure 1

(b) If a crack, blister, or wrinkling is found as a result of the visual check, accomplish the following before further flight (see Figure 1 of this AD):

(1) Zone A: If a blister is detected on the blade suction face, conduct a tapping test inspection on the whole blade for bonding separation.

(i) For blades, P/N 365A33-2131-all dash numbers, 365A12-0010-all dash numbers, and 365A12-0020-00, and -01, if bonding separation or a crack is found, replace the blade with an airworthy blade before further flight.

(ii) For blades, P/N 365A12-0020-02, and -03, if bonding separation exceeds 900 mm^2 in a 30 x 30 mm square or if there is a crack, replace the blade with an airworthy blade before further flight.

(2) Zone B: If a crack, wrinkling, or a blister is found, replace the blade with an airworthy blade before further flight.

(c) Within 10 hours TIS, conduct a tapping test inspection on each blade. If there is bonding separation that exceeds the criteria in paragraphs b(1)(i) and b(1)(ii) of this AD, replace the blade with an airworthy blade before further flight.

Note 1: Edition No. 1, Revision No. 0, of Eurocopter France Service Bulletins 05.09 and 05.00.17, both dated April 16, 2003, pertain to the subject of this AD.

(1) Thereafter, at intervals not to exceed 25 hours TIS or every 50 cycles (each takeoff and landing equals 1 cycle), whichever occurs first, conduct a tapping test inspection for bonding separation on all blades with a serial number (S/N) less than 18912, and blades, P/N 365A12-0020-00 or 365A12-0020-01, with a S/N equal to or greater than 18912. If bonding separation or a crack is found, replace the blade with an airworthy blade before further flight.

(2) Thereafter, at intervals not to exceed 25 hours TIS, conduct a tapping test inspection for bonding separation on blades, P/N 365A12-0020-02 or 365A12-0020-03, in Zone A as depicted in Figure 1 of this AD.

(i) If bonding separation exceeds the criteria specified in paragraph (b)(1)(ii) of this AD or if a crack is found, replace the blade with an airworthy blade before further flight.

(ii) If bonding separation is present and within tolerance of the criteria specified in paragraph (b)(1)(ii) of this AD, conduct a tapping test before the first flight of the day and as often as necessary during the day ensuring that the TIS between tapping tests does not exceed 10 hours TIS between tapping tests.

(iii) Within 25 hours TIS after the discovery of skin debonding in Zone A, remove and replace the blade with an airworthy blade.

(3) Thereafter, at intervals not to exceed 100 hours TIS or 200 cycles, whichever occurs first, conduct a tapping test inspection for bonding separation on blades, P/N 365A12-0020-02 or 365A12-0020-03, in Zone B as depicted in Figure 1 of this AD. If a crack, wrinkling, or a blister is found, replace the blade with an airworthy blade before further flight.

(d) Within 10 hours TIS, and thereafter at intervals not to exceed 100 hours TIS or 200 cycles, whichever occurs first, measure the blade-to-air duct clearance. If the clearance is less than 3 mm, replace the blade with an airworthy blade before further flight.

(e) For blades, P/N 365A12-0020-02 or 365A12-0020-03 with a S/N equal to or greater than 32944, except for S/N 32963 through 33091, S/N 33116 through 33187, or S/N 33232 through 33319:

(1) Within 10 hours TIS, replace blades with 150 or more hours TIS with an airworthy blade.

(2) On or before 160 hours TIS, replace blades with less than 150 hours TIS with an airworthy blade.

(f) This AD revises the Limitations section of the maintenance manual by establishing a 160-hour TIS life limit for blades, P/N 365A12-0020-02 and 365A12-0020-03, with a S/N equal to or greater than 32944, except for S/N 32963 through 33091, S/N 33116 through 33187, and S/N 33232 through 33319.

(g) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Contact the Regulations Group, Rotorcraft Directorate, FAA, for information about previously approved alternative methods of compliance.

(h) Copies of the applicable service information may be obtained from American Eurocopter Corporation, 2701 Forum Drive, Grand Prairie, Texas 75053-4005, telephone (972) 641-3460, fax (972) 641-3527.

(i) Emergency AD 2003-08-53, issued April 23, 2003, becomes effective upon receipt.

Note 2: The subject of this AD is addressed in Direction Generale De L'Aviation Civile (France) AD Nos. T2003-155(A) and T2003-156(A), both dated April 17, 2003.

FOR FURTHER INFORMATION CONTACT: Gary Roach, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Regulations Group, Fort Worth, Texas 76193-0111, telephone (817) 222-5130, fax (817) 222-5961.

Issued in Fort Worth, Texas, on April 23, 2003.

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